AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior listings of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A method for assessing ecological risk to animals ~~receptors~~, comprising:

(a) obtaining a representative sample of rodents from a contaminated site;

(b) obtaining a representative sample of rodents from an animal reference site;

(c) performing a first sperm analysis of the rodents from the contaminated site;

(d) performing a second sperm analysis of the rodents from the animal reference site; **[[**and**]]**

(e) comparing at least one result of the first sperm analysis with at least one result of the second sperm analysis; and

(f) determining whether the at least one result of the first sperm analysis exceeds one or more sperm parameter benchmarks, thereby indicating if the rodents from the contaminated site have impaired reproductive capability and assessing the ecological risk to animals at the contaminated site.

2. (Original) The method of claim 1, wherein step (a) includes obtaining a representative sample of mice at the contaminated site.

3. (Original) The method of claim 1, wherein step (b) includes trapping a representative sample of mice at the animal reference site.

4. (Original) The method of claim 1, wherein the first and second sperm analysis include measuring sperm count.

5. (Original) The method of claim 1, wherein the first and second sperm analysis include measuring sperm motility.

6. (Original) The method of claim 1, wherein the first and second sperm analysis include measuring sperm abnormality.

7. (Withdrawn) The method of claim 1, further comprising corroborating the first and second sperm analysis with **[[**additional**]]** population data.

8. (Withdrawn) The method of claim 7, ~~wherein corroborating includes corroborating the first and second sperm analysis with additional data~~ wherein the **[[**additional**]]** population data relates to species diversity.

9. (Withdrawn) The method of claim 7, ~~wherein corroborating includes corroborating the first and second sperm analysis with additional data~~ wherein the **[[**additional**]]** population data relates to population size.

10. (Withdrawn) The method of claim 7, ~~wherein corroborating includes corroborating the first and second sperm analysis with additional data~~ wherein the **[[**additional**]]** population data relates to sex ratio.

11. (Withdrawn) The method of claim 17, ~~wherein corroborating includes corroborating the first and second sperm analysis with additional data~~ wherein the **[[**additional**]]** data relates to lactation state.

12. (Withdrawn) The method of claim 17, ~~wherein corroborating includes corroborating the first and second sperm analysis with additional data~~ wherein the **[[**additional**]]** data relates to pregnancy.

13. (Currently Amended) A method for assessing ecological risk to animals ~~receptors~~, comprising:

(a) obtaining rodents from animal study sites wherein the animal study sites include at least two former burning **[[**pads**]]** ground sites based on ~~with high~~ hazard quotients for at least one chemical;

(b) obtaining rodents from animal reference sites beyond an area boundary for the former burning ground sites ~~wherein the animal reference sites correspond to the animal study sites and contain low hazard quotients for the at least one chemical~~;

(c) removing a vas deferens from each of the rodents from the animal reference sites and the animal study sites and assessing sperm motility;

(d) removing an epididymis from the rodents and assessing sperm count and sperm abnormality;

~~(e) obtaining a sample from the epididymis and assessing sperm morphology; and~~

[[(f)**]]** (e) comparing results of assessment of the rodents from the animal reference sites with results of assessment of the rodents from the animal study sites; and

(f) determining if the results of assessment of the rodents from the animal study site exceeds one or more sperm parameter benchmarks, thereby indicating if the rodents from the animal study sites have impaired reproductive capability and assessing the ecological risk to animals at the animal study sites.

14. (NEW) A method according to Claim 1, wherein the contaminated site is contaminated with uranium.

15. (NEW) A method according to Claim 1, wherein the contaminated site is contaminated with explosives.

16. (NEW) A method according to Claim 1, wherein the rodents from the contaminated site reflect one hundred generations of exposure to the contaminated site.

17. (NEW) A method according to Claim 1, further comprising corroborating the first and second sperm analysis with data relating to female reproductive state.

18. (NEW) A method for assessing ecological risk to animals, comprising:

collecting a representative sample of rodents from a contaminated site;

collecting a representative sample of rodents from an animal reference site;

comparing sperm count, sperm motility, and sperm morphology of the rodents from the contaminated site with the rodents from the animal reference site; and

determining whether the sperm count, sperm motility, or sperm morphology of the rodents from the contaminated site exceeds one or more sperm parameter benchmarks, thereby indicating if the rodents from the contaminated site have compromised reproductive success and making a determination about the health of terrestrial site animals at the contaminated site.

19. (NEW) A method according to Claim 18, wherein a decrease of approximately 80% to 90% in sperm count indicates comprised reproductive success.

20. (NEW) A method according to Claim 18, wherein a decrease of about 40% to 50% in sperm motility indicates comprised reproductive success.

21. (NEW) A method according to Claim 18, wherein an increase of 4% or more of abnormally-shaped sperm indicates comprised reproductive success.